

## ABSTRACT OF THE DISCLOSURE

A method and apparatus for eliminating the picket fence effect in PET scanners where the scanner includes a master clock and an event processing circuit that generates time stamps during each clock cycle, the scanner also including a coincidence detector that compares the time stamps during each clock cycle to identify coincidence events, the method including the steps of, for consecutive master clock cycles, identifying an overlap period that includes a portion of a first of the master cycles adjacent a second of the master cycles, adding an overlap period that occurs during the overlap period to the second of the master cycles to generate an extended cycle, identifying overlap events that occur during the overlap period in the first of the master cycles, copying the overlap events to the overlap period in the extended second cycle and performing a comparison of the events in the extended cycle to identify coincidence event pairs

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